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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,331

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Lars Jonas Olsson

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EXAMINER

ROZANSKI, MICHAEL T

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

04/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,331	Applicant(s) OLSSON, LARS JONAS	
	Examiner MICHAEL ROZANSKI	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 13-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 13-22 are objected to because of the following informalities: Claims 13-22 were omitted from the claim set filed on 1/7/08. Claims that are canceled or withdrawn must be listed with the appropriate claim status identifier. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-2 and 5-12** are rejected under 35 U.S.C. 102(b) as being anticipated by **Hwang et al** (US 4,887,306).

Hwang et al disclose an adaptive temporal filter for an ultrasound imaging system wherein component image frames are combined with temporal compounding (col 2, lines 11-23). The adaptive temporal filter 16 (i.e. based on lapse in time) filters each pixel signal and provides the filtered signals to the scan converter after which the signals are displayed 20 (col 3, lines 60-68). Pixel signals are represented by the sequence $X(k)$, where k represents time, sample number, or frame number. Each pixel signal is passed through a filter whose characteristics vary in differing degrees as that

pixel signal varies, effectively weighting the contribution of each component frame to the combined frame (col 4, lines 10-38). Thus, the number of frames that are combined in at least one area of the combined image frame is a function of the determined extent to which at least one component image frame varies.

Claims **1-12** are rejected under 35 U.S.C. 102(b) as being anticipated by ***Entrekin et al*** (US 6,126,598).

Entrekin et al disclose an ultrasonic diagnostic imaging system with adaptive spatial compounding, wherein signal samples can be weighted with a weighting factor that is a function of the number of component frames used to form a particular compound image (col 3, lines 37-63). Sum of absolute differences (SAD) are used to quantify frame-to-frame similarity or difference in at least one region of interest (RIO) within the frame. The temporal sequence of the SAD values between corresponding frames in subsequent compound images gives a running indication of the amount of misregistration due to scanhead motion or tissue movement, and can be used to change the persistence at which all or a portion of an image is displayed, thus inferring that the image can be divided into a plurality of areas designated by an operator (col 4, line 39-col 5, line 6).

Response to Arguments

Applicant's arguments filed 1/7/08 have been fully considered but they are not persuasive.

In reference to Hwang, applicant argues that a "portion" or "area" is not analyzed and that, instead, the temporal filter is response to single pixel locations. Examiner agrees that Hwang uses adaptive filtering on a pixel-by-pixel basis (col 1, lines 5-10). Examiner disagrees in two respects. First, a "portion" or "area" of a frame does not necessarily indicate that more than one pixel is used while assessing the frame to frame differences. Second, even though filtering is performed pixel-by-pixel, the frame involving multiple areas of pixels are averaged, thereby assessing frame by frame misregistration.

In reference to Entrekin et al, applicant argues that spatial compounding is performed, and not temporal compounding. Examiner agrees that spatial compounding is performed (col 3, line 38). However, spatial compounding inherently involves temporal compounding because only one acoustic pulse can be sent into the target at a time (see Yu et al US 6,524,252 for reference at col 2, lines 51-53).

Therefore, without defining the so-called "component areas" over Hwang and without further defining how the frames are averaged (i.e. without moving an ultrasonic scanhead to a different spatial position) over Entrekin et al, then the rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL ROZANSKI whose telephone number is (571)272-1648. The examiner can normally be reached on Monday - Friday, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3768

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768

MR